Can we predict the social hierarchy of a group of giraffes (G*iraffa camelopardalis*) by observing the order of leaving the enclosure? A preliminary study

Chiara Grasso [1], *Federico Guillén-Salazar* [2], *Elisabetta Macchi* [3], *Ester Orient-Pérez* [2], *Paula Martínez-Ros* [2] & *Susana Astiz* [4]

1 Università degli Studi di Torino – Department of Life Sciences and System Biology
2 Universidad CEU Cardenal Herrera (Valencia) – Ethology and Animal Welfare Section
3 Università degli Studi di Torino - Department of Veterinary Sciences
4 INIA (Madrid), Department of Animal Reproduction

E-mail: chiara.grasso@edu.unito.it

The population of giraffes (*Giraffa camelopardalis*) in the wild has dramatically decreased over the last 20 years. For this reason, *ex situ* breeding and management has become necessary for conservation and knowledge of the species. This study was carried out at the Bioparc Valencia (Spain) in March and April 2017, on a group of 6 giraffes (1 male and 5 females). This research aims to deepen the ethological knowledge of giraffes and their captive management, verifying whether the sequence in which animals leave the day-time enclosure to reach the night-time one might reflects their dominance hierarchy, as in the night-time enclosure animals could find more food than in the day-time one. We analysed the group's social structure and hierarchy collecting frequencies of social interactions using a continuous focal animal sampling method. Social relationships between individuals and dominance hierarchy were analysed by SOCPROG and SPSS statistical software focusing on agonistic behaviours. The results showed that the giraffes had a linear dominance hierarchy, in which the male was the dominant individual, followed by the older female. Juvenile individuals were at the bottom of the hierarchy. This order also seemed to be correlated with the height of the subjects. Results showed that the exit sequence from the enclosure actually reflects the dominance hierarchy. This study thus contributed to increase the ethological knowledge of giraffes and suggested a simplification and speeding up of the process to identify captive giraffe's social structure.